

Our Reference: DFS-138-A

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Martin Gehrke & Torsten Pechstein
Serial Number: 10/001,668
Filing Date: October 23, 2001
Examiner/Art Group Unit: Unknown/Unknown
Title: A DESIGN FOR CONSTRUCTING AN INPUT CIRCUIT TO RECEIVE AND PROCESS AN ELECTRICAL SIGNAL

PRELIMINARY AMENDMENT

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

If any charges or fees must be paid in connection with the following communication, they may be paid out of our Deposit Account No. 25-0115.

Prior to initial examination, please amend the above-identified patent application as indicated below.

In the claims:

1. (Amended) A design for constructing an input circuit to receive and process an electrical signal, such as a voltage signal from a voltage source, specifically from a sensor where the input circuit has an extremely high input resistance of at least 10^{11} ohms and is located on a printed circuit board, where a first area carrying input circuit components of the printed circuit board is separated by a channel-shaped recess from a surrounding second area, characterized in that the channel-shaped recess terminates in the interior of the printed circuit board and is extended in the direction of the thickness of the printed circuit board as far as a moisture-impermeable barrier layer which underlies the first area of the printed circuit

board, and in that the channel-shaped recess and the first area are filled and enclosed by a cohesive moisture-impermeable sealing material.

2. (Amended) The design in accordance with claim 1, wherein the moisture-impermeable barrier layer is a metallic layer.

3. (Amended) The design in accordance with claim 2, wherein the metallic layer forms a flat layer inside the printed circuit board and is configured uninterruptedly at least under the first area.

4. (Amended) The design in accordance with claim 1, wherein the printed circuit board is made from an FR4 material, which has at least one moisture-impermeable barrier layer in its interior.

5. (Amended) The design in accordance with claim 1, wherein walls of the printed circuit board bordering the channel-shaped recess are provided with a moisture-impermeable coating.

6. (Amended) The design in accordance with claim 5, wherein the coating is formed from a metal alloy, which is attached in a fluid-tight manner to the barrier layer.

7. (Amended) The design in accordance with one of the preceding claims, wherein the moisture-impermeable sealing material is manufactured on a epoxy base or on a high-density polyethylene base or on a liquid resin base.

8. (Amended) A circuit card for measurement processing equipment characterized by a design in accordance with claim 1.

REMARKS

After entry of this amendment, claims 1-8 have been amended.

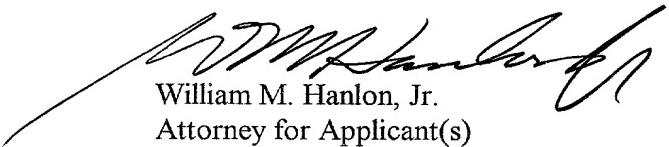
A handwritten, corrected copy of the specification is enclosed showing the changes which have been made to the specification as required by Section 608.01 (Q) and 714.20 (1) of the Manual of Patent Examining Procedure. The Substitute Specification filed herewith has been amended to utilize idiomatic English, correct United States patent practice. The Substitute Specification includes no new subject matter; but does include the same changes handwritten in red in the attached, corrected, original specification. Entry of the Substitute Specification is respectfully requested.

It is submitted that this Amendment has antecedent basis in the application as originally filed, including the specification, claims and drawings, and that this Amendment does not add any new subject matter to the application.

Consideration of the application as amended is requested.

Respectfully submitted,

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VERSION OF AMENDMENTS WITH MARKINGS TO
SHOW CHANGES MADE

1. (Amended) [Design] A design for constructing an input circuit to receive and process an electrical signal, such as a voltage signal from a voltage source, specifically from a sensor[, such as an electrochemical, inductive or optical sensor,] where the input circuit has an extremely high input resistance of at least 10^{11} ohms and is located on a printed circuit board [(4)], where a first area carrying input circuit components [(6, 8)] of the printed circuit board [(4)] is separated by a channel-shaped recess from a surrounding second area [(12)][surrounding or contiguous to it (10)], characterized in that the channel-shaped recess [(10)] terminates in the interior of the printed circuit board [(4)] and is extended in the direction of the thickness of the printed circuit board [(4) thickness] as far as a moisture-impervious barrier layer [(2)] which underlies the first area [(2)] of the printed circuit board, and in that the channel-shaped recess [(10)] and the first area [(2)] are filled and enclosed by a cohesive moisture-impermeable sealing material [(24)].
2. (Amended) [Design] The design in accordance with claim 1, wherein the moisture-impermeable barrier layer [(20)] is a metallic layer.
3. (Amended) [Design] The design in accordance with claim [1 and] 2, wherein the metallic layer [(18)] forms a flat layer inside the printed circuit board [(4)] and is configured uninterruptedly at least under the first area [(2)].
4. (Amended) [Design] The design in accordance with [claims] claim1[, 2 or 3], wherein the printed circuit board [(4)] is made from an FR4 material, which has at least one moisture-impermeable barrier layer [(20)] in its interior.

5. (Amended) [Design] The design in accordance with [one of the preceding claims] claim 1, wherein [the] walls [(26)] of the printed circuit board [(4)] bordering the channel-shaped recess [(10)] are provided with a moisture-impermeable coating [(28)].

6. (Amended) [Design] The design in accordance with claim 5, wherein the coating [(28)] is formed from a metal alloy, which [for its part] is attached in a fluid-tight manner to the barrier layer [(20)].

7. (Amended) [Design] The design in accordance with one of the preceding claims, wherein the moisture-impermeable sealing material [(24)] is manufactured on a epoxy base or on a high-density polyethylene base or on a liquid resin base.

8. (Amended) [Circuit] A circuit card for measurement processing equipment[, specifically for a sensor,] characterized by a design in accordance with [one of the preceding claims] claim 1.